REMARKS

Claims 1-13 are currently pending in this application. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 1-13 under §103(a) as being unpatentable over US Patent 5,953,089 to Hiji et al. (hereinafter Hiji) in view of US Patent 5,825,543 to Ouderkirk et al. (hereinafter Ouderkirk). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness in that the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, and in that they fail to teach or suggest all the elements as set forth in Applicants' claims.

First, the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified and, therefore, the teachings of the references are not sufficient to render the claims *prima facie* obvious.[1]

Hiji teaches a light diffusing layer 30 including directors (a disperse phase) that are randomly oriented and which vary spatially continuously so that the light diffusing layer 30 is opaque.[2] Because the light directors are oriented randomly, Hiji does not include a direction in which the light transmittance is maximum (i.e., Δn^2), instead, the light transmittance is uniform over the entire light diffusing layer 30. Thus, Hiji's principle of operation is having randomly oriented directors. And it is because of Hiji's principle of operation—wherein the directors are oriented randomly—that it is possible for Hiji to achieve a desired low thickness of the light-diffusing layer.[3]

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[1] *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See also MPEP § 2143.01.

[2] Hiji at: col. 3, lines 18-20, 25-28, 41-447; col. 4, lines 52-53; col. 5, lines 6-12; and col. 7, lines 38-45.

[3] *Id.*

In contrast to Hiji's principle of operation, Ouderkirk teaches a film wherein a disperse phase is present in a continuous phase so as to be oriented along at least one axis.[4] It is because the disperse phase is oriented along at least one axis that the indices of refraction of the continuous and disperse phases are chosen so as to be substantially mismatched along a first of three mutually orthogonal axes, and so as to be substantially matched along a second of three mutually orthogonal axes.[5] Thus, Ouderkirk's principle of operation is to orient the disperse phase along one axis, and to chose appropriate indices of refraction for the disperse phase.

The Examiner asserts that it would have been obvious for one of ordinary skill "to use the scheme taught by Ouderkirk et al. in the diffusing layer of Hiji et al.".[6] But doing so would impermissibly replace Hiji's principle of random orientation of the light directors (disperse phase) with Ouderkirk's principle of orienting the disperse phase along one of three mutually orthogonal axis.

Second, the references fail to teach or suggest all the elements as set forth in Applicants' claims.

Each one of claims 3 and 4 sets forth a light diffusing plate comprising a birefringent film containing minute regions, wherein a difference in refractive index between the birefringent film and the minute regions in a direction perpendicular to an axis direction in which a linearly polarized light has a maximum transmittance, Δn^1, is 0.03 or larger and that in the axis direction, Δn^2, is not larger than 80% of the Δn^1, and wherein the Δn^1 direction is parallel to a transmission axis of the polarizing plate, and further wherein each of the minute regions has a length in the Δn^1 direction of from 0.05 to 500μm.

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[4] Ouderkirk at: abstract; and col. 4, lines 63-64.

[5] Ouderkirk at col. 3, line 63 - 4, line 13.

[6] Office Action at page 3, lines 1-3.

Because the length of the minute regions in the Δn^1 direction is within the claimed range, Rayleigh scattering is achieved. That is, the minute regions are of a size sufficiently smaller than the wavelengths of the light to be used and, therefore, inhibit backward scattering.[7]

The Examiner asserts that the dimensions of the dispersed particles "are result effective variables, the determination of which has been judicially deemed as obvious to those of ordinary skill in the art."[8] However, it is the prior art that must recognize that a variable is a result-effective one before its optimization can be deemed obvious to one of ordinary skill in the art. Here, it is Applicants, not Hiji, who have discovered that size of the disperse phase is result effective of inhibition of backward scattering, wavelength dependence, improving the efficiency of light utilization, preventing coloration due to wavelength dependence, preventing the minute regions from being visually perceived to impair bright displaying, and attaining satisfactory film-forming properties and film strength.[9] In contrast, Hiji only notes the importance of disperse-phase size as result-effective of achieving a desired low film thickness[10]; it does not recognize size as result-effective of inhibition of backward scattering, wavelength dependence, improving the efficiency of light utilization, preventing coloration due to wavelength dependence, preventing the minute regions from being visually perceived to impair bright displaying, and attaining satisfactory film strength. Therefore, even if one of ordinary skill in the art were to optimize Hiji's disperse-phase size so as to minimize film thickness, such size would not be the same as that claimed by Applicants.

Claim 9 sets forth an optical element comprising a polarizing plate and a light diffusing plate laminated on the polarizing plate, wherein the light diffusing plate comprises a birefringent film containing minute regions, wherein a difference in refractive index between the birefringent film and the minute regions in a direction perpendicular to an axis direction in which a linearly

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[7] Specification at page 15, last paragraph.

[8] Office Action at the paragraph bridging pages 2-3, lines 5-7.

[9] Specification at page 16, 1st paragraph.

[10] Hiji at col. 5, lines 19-27.

polarized light has a maximum transmittance, Δn^1, is 0.03 or larger and that in the axis direction, Δn^2, is not larger than 80% of the Δn^1, and wherein the Δn^1 direction is parallel to a transmission axis of the polarizing plate.

In contrast to that set forth in claim 9, Hiji discloses a light diffusing layer 30 in a guest-host liquid crystal display, wherein polarizers are not necessary.[11] That is, guest-host crystals use dichroic dye (guest) that is added to a liquid crystal (host), and polarizers are not necessary.[12] Hiji describes his crystal 50 as including a liquid crystal layer having dichroic dye and, therefore, is a guest-host crystal, wherein polarizers are not necessary.[13] Further, in Fig. 1—which depicts Hiji's invention—no polarizing plate is shown.

The Examiner asserts that it would have been obvious to modify the dimensions of the particles dispersed in Hiji's matrix. Further, the Examiner asserts that Ouderkirk teaches selecting the indices of refraction so as to be in the range claimed by Applicants. Nonetheless, neither the Examiner's suggested modification of Hiji, nor the teachings of Ouderkirk, set forth that a polarizing plate is laminated with a light diffusing plate as set forth in Applicants' claims. Therefore, for the sake of argument, even assuming Hiji and Ouderkirk teach what the Examiner asserts, and that one of ordinary skill in the art would have been motivated to combine the references as suggested by the Examiner, any such combination would still fail to teach or suggest all the elements as set forth in Applicants' claim 9.

For the above reasons, claims 1-13 are allowable over Hiji in view of Ouderkirk.

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[11] Hiji at col. 1, lines 32-39.

[12] *Id.*

[13] Hiji at: col. 1, lines 14-16; col. 3, lines 7-17; col. 6, lines 16-26; and col. 7, lines 10-18.

Information Disclosure Statement (IDS)

On December 21, 1999, Applicants submitted an IDS citing one US Patent and three foreign patent documents. However, the Examiner has not returned an initialed copy of the PTO form-1449 submitted with the December 21 IDS. Therefore, Applicants respectfully request that the Examiner return a properly initialed copy of the PTO form-1449 with his next Office Action.

Miscellaneous Matters

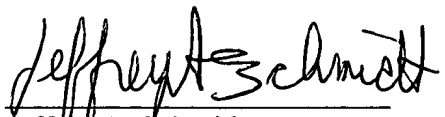
Page 13 of the specification has been amended so as properly to recite a film thickness of --3 mm-- instead of "3 m".

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

On page 13, the 1st full paragraph has been changed as follows:

The thickness of the film to be oriented can be suitable determined. However, from the standpoint of suitability for orientation and from other standpoints, the thickness thereof is generally from 1 μm to 3 [m] mm, preferably from 5 μm to 1 mm, more preferably from 10 to 500 μm. In forming the film, appropriate additives can be incorporated, such as, e.g., a dispersant, surfactant, ultraviolet absorber, color tone regulator, flame retardant, release agent, and antioxidant.